W. J. Stephenson; Schoolhouse Cave, 4.4 mi. NE Riverton, 2205 feet, Pendleton County, W. Va.; no collector's number.

*Distribution.*—Central portion of the Appalachian Highlands in western Virginia and eastern West Virginia.

*Diagnosis.*—Adult coloration: Upper parts—mass effect between Prout's Brown and Bister; hair bases about Benzo Brown. Underparts—hair tips between Light Vinaceous-Cinnamon and Light Pinkish Cinnamon; hair bases Fuscous. Distinction between tip and base of hair sharp on underparts, poor on dorsum. Size averages medium for subgenus; forearm averages relatively long. Rostrum relatively long and not depressed; anterior nares wide and round in posterior outline (dorsal view). First upper incisor usually without trace of secondary cusp.

*Measurements.*—Specimens from all parts of range. Fifteen adult males: Total length, 101 (98–110); tail vertebrae, 50 (48–52); hind foot, 11 (10–12); ear from notch, 34 (31–38); tragus, 14 (11–15); forearm, 44.5 (43.1–46.4); greatest length of skull, 16.4 (16.0–16.8); zygomatic breadth, 8.8 (8.6–9.0); interorbital breadth, 3.7 (3.6–3.9); braincase breadth, 8.0 (7.7–8.3); braincase depth, 5.8 (5.6–5.9); maxillary tooth row, 5.3 (5.2–5.4); postpalatal length, 6.1 (6.0–6.3); palatal breadth, 6.1 (5.9–6.3). Ten adult females: Total length, 103 (99–112); tail vertebrae, 49 (46–54); hind foot, 12 (11–13); ear from notch, 35 (34–39); tragus, 15; forearm, 45.8 (44.6–47.4); greatest length of skull, 16.6 (16.1–17.0); zygomatic breadth, 9.0 (8.8–9.1); interorbital breadth, 3.8 (3.6–3.9); braincase breadth, 8.1 (7.7–8.4); braincase depth, 5.8 (5.5–6.0); maxillary tooth row, 5.3 (5.2–5.4); postpalatal length, 6.2 (6.0–6.4); palatal breadth, 6.1 (6.0–6.3).

*Comparisons.*—Requires comparison only with *C. t. ingens.* See account of that race above.

*Specimens examined.*—A total of 93 from the following localities: Virginia: Tazewell County, Burkes Garden, 4 (US). West Virginia: Grant County, Petersburg, 10 mi. S, 3 (CM). Pendleton County, Cave Mountain Cave, 1.4 mi. W Brushy Run, 11 (US); Hellhole, 3.6 mi. NE Riverton, 5 (US); Hoffman School Cave, 4.9 mi. SSW Franklin, 2 (US); Schoolhouse Cave, 4.4 mi. NE Riverton, 31 (US); "Smokehole," 29 (AMNH); "Cave Rock Cave," 8 (AMNH).

## MALACOLOGY.—*Notes on American cyclophoroid land snails, with two new names, eight new species, three new genera, and the family Amphicyclotidae, separated on animal characters.* J. P. E. Morrison, U. S. National Museum.

(Received January 17, 1955)

Eight American species of the land operculate group of snails up to now known as the Cyclophoridae that have come to the United States National Museum collections in recent years from different sources are here described as new. Studies of their family relationships are outlined briefly in advance of a complete biological revision of the American members of the two families concerned, the Cyclophoridae and the Amphicyclotidae. Anatomical analysis of American forms that previously have been included in the family Cyclophoridae has shown that this group is polyphyletic in origin. The almost complete fixation of the radular cusp formula of the endemic American genera identifies them only as American and does not give any differential clues as to their other relationships. The male reproductive characters, however, are critically indicative of family and subfamily relationships, as I have already noted (Morrison, 1954). The American subfamilies Neopupinae and Neocyclotinae and the typically Asiatic Cyclophorinae of the land-snail family Cyclophoridae, in common with the marine gastropod family Littorinidae, possess in the males a verge with only a seminal groove on its surface. The external male organ or verge of the Littorinidae is epipodial in position and well developed. That of the subfamily Cyclophorinae of the Cyclophoridae is also epipodial in position, but rudimentary or vestigial.

Members of the American subfamily Neopupinae possess a prominent verge that is lateral to and behind the right tentacle, without any specialized terminal appendage. The genera *Aperostoma* (Fig. 4) and *Farcimen* (Fig. 1) both belong to the Neopupinae.

The males of the Neocyclotinae possess a verge attached middorsally with a very short, specialized, terminal appendage. Illustrations of *Cyclopilsbrya* (Fig. 17), *Cyclobakeria* (Fig. 16), *Cyclojamaicia* (Fig. 18), *Cyclochittya* (Figs. 21–22), *Poteria* (Fig. 2), *Plectocyclotus* (Fig. 20), *Cycladamsia* (Fig. 24), *Neocyclotus* (Fig. 19), *Cyclohidalgoa* (Fig. 23), and *Incidostoma* (Fig. 5) are furnished as examples of the subfamily Neocyclotinae.

In contrast, the group previously known as the subfamily Amphicyclotinae of the land snails, and the marine family Lacunidae, are in common possession of a structurally complete tubular and internal vas deferens in the males. It follows logically that only animals of the littorinoid type can be included in the family Cyclophoridae. The amphicyclotid group, derivatives of a lacunoid ancestry, must be considered a separate family of land snails, the Amphicyclotidae. The completely tubular, middorsally attached verge of the family Amphicyclotidae is illustrated by the genera *Cyclocubana* (Fig. 25), *Cyclohaitia* (Fig. 3), and *Amphicyclotulus* (Fig. 6).

Family Cyclophoridae Gray

Subfamily Cyclophorinae, s. s.

Genus **Maizaniella** Bequaert and Clench, 1936

Genotype: *Maizaniella leonensis* (Morelet, 1873), by original designation.

The new name *Cyclopomops* proposed by Bartsch (1942, p. 219) for *Cyclopoma* Troschel, 1847 (preoccupied), is biologically synonymous with *Maizaniella* Bequaert and Clench, 1936. It seems highly probable that both the "American" species *Maizaniella cinereus* (Drouet, 1859) (U.S.N.M. Bull. 181: 141: 18: 25: 1942) recorded from Martinique, and *Maizaniella moricandi* (Pfeiffer, 1852) (U.S.N.M. Bull. 181: 219: 40: 7–9: 1942) recorded from Bahia, Brazil, were accidentally introduced from the equatorial region of Africa with the slave trade or with the commercial trade coincident thereto.

Genus **Buckleyia** Higgins, 1872

See U. S. Nat. Mus. Bull. 181: 151. 1942.

Genotype: (*Cyclophorus* (*Buckleyia*) *montezumi* Higgins, 1872) = *Cyclophorus martinezi* Hidalgo, 1866, by monotypy.

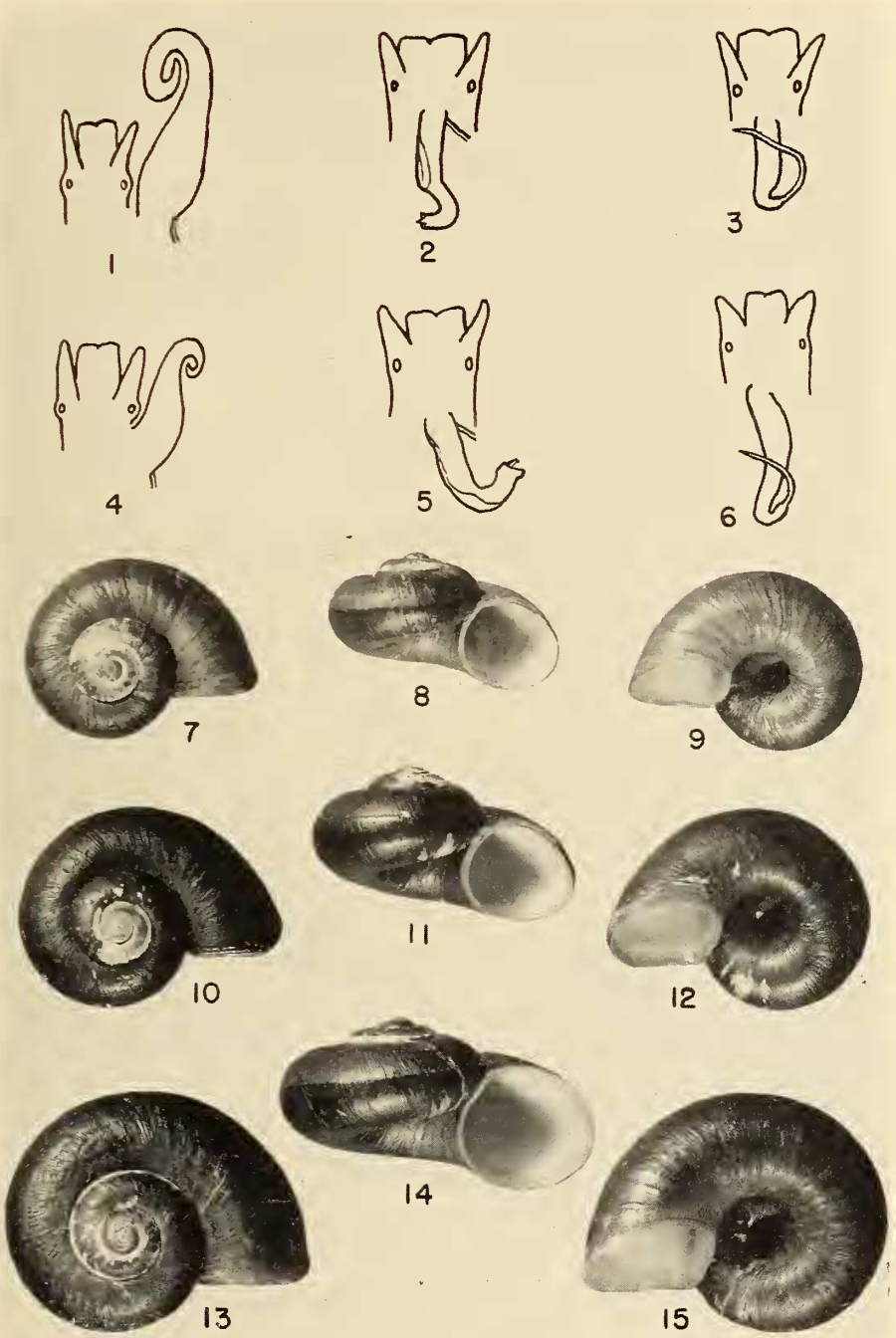
This endemic American genus is allocated to the Cyclophorinae because of the color and ornamentation of the shell. *Buckleyia* agrees with many Asiatic genera of this group in possessing axial bands or flammules of color on the shell. The animal characters are still unknown. When males of *Buckleyia* are available, their gross external anatomy should be compared with Heude's figures of the animals of *Cyclotus erroneus* Heude and *Cyclophorus pallens* Heude (Heude, 1890, pl. 42, figs. 12c, 13a).

**Buckleyia haughti,** n. sp.

Figs. 26–28

Shell discoid, of 4¼ well-rounded regularly increasing whorls; almost equally concave above and below; peripherally keeled with six low cords and banded spirally with lighter and darker green bands; the darker bands interrupted or incomplete by reason of coalescence of axial flammules of the darker green color. Aperture almost circular, the columellar margin appressed to the penultimate whorl only between the dorsal and ventral cords. The suture deep, bounded by these cords. The peripheral color band is narrow and becomes more flammulate and obsolete near the aperture; above and below it is margined by lighter bands of equal width. The dorsal and ventral darker green bands are subequal; both are discreetly margined peripherally including the dorsal and ventral thread-keels as the peripheral margin of these color bands. Centrally these bands are less distinctly separated, fading out to the paler green color, along a more or less regular but markedly flammulate edge. Sculpture consisting of spiral cords and threads, the six subequal low cords subequally spaced above and below the periphery on the central third of the whorl's outer circumference. Between them and beyond on the dorsal and ventral surfaces the fine spiral threads are at least as prominent as the fine thread-lines of growth. These fine spiral threads are only obsolete on the inner quarter faces of the whorls above and below, near the sutures. Nuclear whorls smooth, the spiral cords beginning at the end of the second whorl and continuing without reduction in strength to the aperture.

The unique holotype was collected by Oscar L. Haught along a stream north of the Río Nuqui, Dept. Choco, Colombia, and is now catalogued as U.S.N.M. no. 488865. It has 4¼ whorls and




Figs. 1–15.—1, *Farcimen superbum itinerarium* Torre and Bartsch, from Sumidero, Cuba (U.S.N.M. no. 516032); 2, *Poteria simpsoni* (Bartsch), from Bogwalk, Jamaica (356078); 3, *Cyclohaitia haitia* Bartsch, from north of Tiburón, Haiti (404068); 4, *Aperostoma walkeri* H. B. Baker, from Necaxa, Puebla, Mexico (515791); 5, *Incidostoma giganteum* (Reeve), from the Cerro de Garagara, Panama (251101); 6, *Amphicyclotulus rufescens* (Sowerby), from Martinique (535859); 7–9, *Incidostoma diminutum*, n. sp., holotype, from near Papallagta, Ecuador (543530); 10–12, *Incidostoma chocolatum*, n. sp., holotype, from near Papallagta, Ecuador (543527); 13–15, *Incidostoma jacksoni*, n. sp., holotype, from near Mera, Oriente Province, Ecuador (543524). (Figs. 1–6, external anatomy sketched to show head and verge of male, not drawn to scale; figs. 7–15 approximately ×1.5. All numbers are U. S. Nat. Mus.)

measures: Height 7.6 mm; greater diameter 23.4 mm; lesser diameter 19.2 mm.

Of the same size and very close in general appearance to *B. bifasciata* Mousson from Antioquia, Colombia, *haughti* may be easily distinguished by the six low but distinct peripheral cords and by the difference in the color banding of those cords. In the only specimen of *bifasciata* seen, the four peripheral cords are all flammulate with light and dark spots of color over them. In *haughti* the dorsal and ventral cords are completely dark, the central cords indistinct in color, and lighter toward the aperture where the narrow peripheral band becomes obsolete and almost disappears.

Subfamily Neopupinae Kobelt and Moellendorff, 1898

This subfamily includes the genera *Aperostoma* and *Tomocyclus* from Central America and the West Indian genera *Farcimen*, *Farcimoides*, *Neopupina*, and *Megalomastoma*.

Genus **Aperostoma** Troschel, 1847

See U. S. Nat. Mus. Bull. 181: 169. 1942.

Genotype: *Aperostoma mexicanum* (Menke), by subsequent designation by Herrmannsen, 1852, suppl., p. 10.

This genus was listed under the synonymic name *Cyrtotoma* in U. S. Nat. Mus. Bull. 181. H. B. Baker (1943) pointed out the nomenclatorially wrong usage of *Aperostoma* in that bulletin and cited the earliest valid genotype designation as listed above. The true subfamily relationship of the Mexican genus *Aperostoma* was proved upon examination of the animals of *Aperostoma fischeri* Bartsch and Morrison and of *Aperostoma walkeri* H. B. Baker (Fig. 4) lent for study to the United States National Museum by Dr. Baker.

Genus **Farcimen** Troschel, 1847

See U. S. Nat. Mus. Bull. 181: 4. 1942.

Genotype: (*Turbo tortum* Wood) = *Farcimen tortum* (Wood), 1828, by subsequent designation by Herrmannsen, 1847, p. 439.

**Farcimen superbum itinerarium** Torre and Bartsch, 1942

See U. S. Nat. Mus. Bull. 181: 35, pl. 7, figs. 10–12. 1942.

The gross external male anatomy of specimens of this subspecies from Sumidero, Pinar del Río, Cuba, is figured herewith (Fig. 1) for comparison with that of *Aperostoma*. This is in agreement with the more generalized figure published by Poey (1858, vol. 2, p. 67, pl. 7, fig. 2) of the male animal of *Farcimen alutaceum* (Pfeiffer).

Subfamily Neocyclotinae Kobelt and Moellendorff, 1898

Genus **Cyclopilsbrya** Bartsch, 1942

See U. S. Nat. Mus. Bull. 181: 71. 1942.

Genotype: (*Cyclostoma jugosum* C. B. Adams) = *Cyclopilsbrya jugosa* (C. B. Adams 1852), by original designation.

**Cyclopilsbrya caribaea** (Clench and Aguayo, 1935)

See U. S. Nat. Mus. Bull. 181: 77, pl. 13, figs. 43–45. 1942.

The gross external anatomy of the head and verge of the male of this species from Mocho, St. James, Jamaica, is here illustrated (Fig. 17).

Genus **Cyclobakeria** Bartsch, 1942

See U. S. Nat. Mus. Bull. 181: 115. 1942.

Genotype: (*Cyclotus novaespei* Chitty) = *Cyclobakeria novaespei* (Chitty, 1857), by original designation.

This genus is here restricted to those species that anatomically and geographically group about the genotype. *Cyclobakeria* is known only from northwestern Jamaica.

**Cyclobakeria nanum** Bartsch, 1942

See U. S. Nat. Mus. Bull. 181: 120, pl. 16, figs. 19–21. 1942.

The male animal of this species from Cousin's Cove, Hanover, Jamaica, has been sketched for our Fig. 16.

Genus **Cyclojamaicia** Bartsch, 1942

See U. S. Nat. Mus. Bull. 181: 67. 1942.

Genotype: (*Cyclostoma suturale* Sowerby) = *Cyclojamaicia suturalis* (Sowerby, 1843), by original designation.

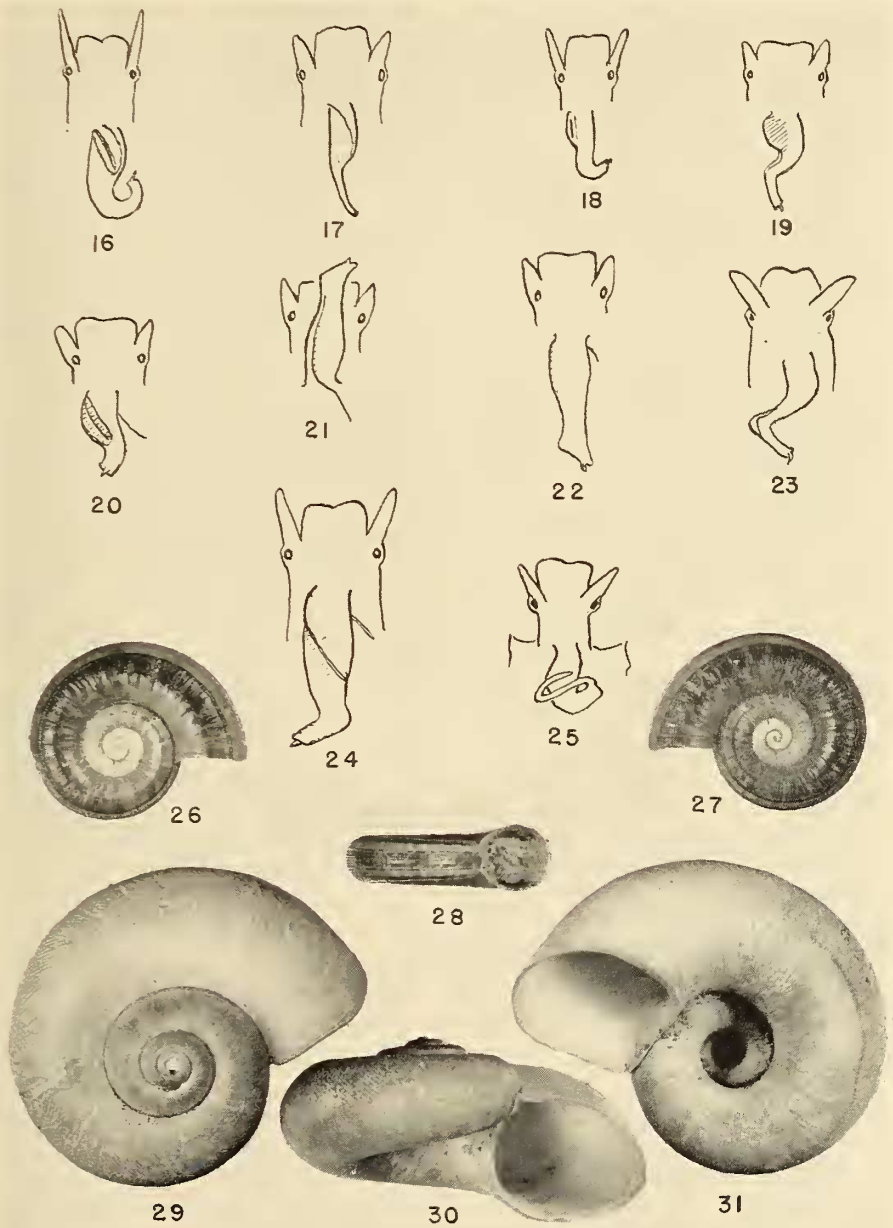
**Cyclojamaicia suturalis** (Sowerby, 1843)

See U. S. Nat. Mus. Bull. 181: 69, pl. 12, figs. 10–12. 1942.

The external anatomy (head and verge of the male) of this species from Island, St. Elizabeth, Jamaica, is sketched in our Fig. 18.

**Rugicyclotus**, n. gen.

Genotype: *Rugicyclotus perplexus*, n. sp.




Figs. 16–31.—16, *Cyclobakeria nanum* Bartsch, from Cousin's Cove, Hanover, Jamaica (398741); 17, *Cyclopilsbrya caribaea* (Clench and Aguayo), from Mocho, St. James, Jamaica (356202); 18, *Cyclojamaicia suturalis* (Sowerby), from near Island, St. Elizabeth, Jamaica (375179); 19, *Neocyclotus grenadensis mcsweeni* (Bartsch), from Baltazar, Grenada, B. W. I. (473942); 20, *Plectocyclotus lineatus* (Gray), from the Mandeville region, Manchester, Jamaica (128018); 21, 22, *Cyclochittya dentistigmata* (Chitty), from 2¼ miles east of Bath, St. Thomas, Jamaica (401305); 23, *Cyclohidalgoa translucida bejumensis* (H. B. Baker) from Banco Largo, Bejuma, Venezuela (lent by A.N.S.P.); 24, *Cycladamsia seminudum* (C. B. Adams), from near Balaclava, St. Elizabeth, Jamaica (536848); 25, *Crocidopoma* (*Cyclocubana*) *perdistinctum* (Gundlach), from near Banabacoa, Oriente, Cuba (Ramsden; 618779); 26–28, *Buckleya haughti*, n. sp., holotype, from north of Río Nuqui, Dept. Choco, Colombia (488865); 29–31, *Amphicyclotus megaplanus*, n. sp., holotype, from near Ocozocoantla, Chiapas, Mexico (618777). (Figs. 16–25 external anatomy sketched to show head and verge of male, not drawn to scale; figs. 26–31 approximately ×1.1. All numbers are U. S. Nat. Mus.)

Shell small, depressed helicoid, with regularly increasing, well-rounded whorls, nearly circular in cross section, with no trace of an umbilical keel, and separated above by a deep suture. Shell sculpture of fine growth lines over heavy diagonal, zigzag, or chevron-shaped rugosities; umbilicus widely open, about one-third the diameter of the shell; aperture circular, entire; inner lip a little thickened. Operculum and animal unknown.

Only examination of the opercula and animals (when they are available) can permanently settle the question of the true biological relationship of *Rugicyclotus*. It is here assigned a position next to *Cyclovendreysia*, whose shells it most resembles, although so strikingly different in rugosity of shell sculpture.

**Rugicyclotus perplexus**, n. sp.

As originally declared by Bartsch (1942, p. 137) the "pseudogeneric term" *Incerticyclus* has no nomenclatorial standing. Likewise it follows that any specific name introduced in association with that name was not thereby validated in binomial nomenclature. The shell described and figured by Bartsch (1942, p. 140, pl. 18, figs. 19–21) is hereby validly named *Rugicyclotus perplexus*, as above. At present this species is known only from the type locality at Appleton, St. Elizabeth, Jamaica, where it was collected by C. R. Orcutt.

The holotype, U.S.N.M. no. 535988, has 3.3 whorls remaining and measures: Height 7.8 mm; greater diameter 14.9 mm; lesser diameter 11.3 mm; aperture diameter 5.7 mm. Two paratypes, from the same source, a little smaller than the holotype, are catalogued as U.S.N.M. no. 378448.

**Cyclochittya**, n. gen.

Genotype: (*Cyclotus dentistigmatus* Chitty) = *Cyclochittya dentistigmata* (Chitty, 1857).

Neocyclotine shells moderately to strongly rugose, with a well-developed umbilical keel which is characteristically marked basally by alternating pits and short buttressing ridges to produce a tooth-marked appearance.

The operculum of members of this genus is of the fundamental *Poteria* stock, differing in the lesser development of the raised lamella, so that the peripherally reflected external edge of the lamella does not meet the succeeding turn and hence does not completely roof over the external face of any portion of the operculum. The peripheral face of the raised lamella is always more or less concave, after the design of a shallow pulley rim. This concave periphery is in direct contrast to that of the operculum of *Cyclobakeria*, which is superficially similar, but developed from the *Cyclopilsbrya* stock, and has a more or less convex periphery of the raised lamella, and never has any external reflection of the outer edge of the lamella. The operculum of *Cyclochittya* was figured in U. S. Nat. Mus. Bull. 181 (pl. 42, figs. 1–3) as an example of *Cyclobakeria*. The operculum of *Cyclobakeria* has not yet been figured.

The animals of *Cyclochittya dentistigmata* (Chitty, 1857) (Figs. 21, 22) and of *C. yallahsensis* (Bartsch, 1942) have been examined and found to differ in details of the verge from the animal of *Cyclobakeria nanum* Bartsch, 1942.

Known members of the genus, in addition to the genotype, are *C. corrugata* (Chitty, 1857), *C. chittyi* (Bartsch, 1942), *C. yallahsensis* (Bartsch, 1942), *C. balnearis* (Bartsch, 1942), and *C. schermoi*, n. sp. All are from the southeastern part of the Island of Jamaica. A closer analysis of the nomenclature involved reveals the fact that the specific name *Cyclotus corrugatus* Chitty, 1857, is not preoccupied. As the earliest available name it should be used instead of the new name *magister* proposed by Bartsch (1942, p. 119).

**Cyclochittya schermoi**, n. sp.

The fossil form described and figured by Bartsch (1942, p. 138, pl. 41, figs. 10–12) is here validly named *Cyclochittya schermoi*. As noted previously, this name cannot be considered as validly published in 1942, because it was not introduced in connection with a generic name at that time.

The holotype, A.N.S.P. no. 82532, was collected by Uselma C. Smith and S. L. Schermo from the Miocene fossil beds at Bowden, Jamaica. It has 4.4 whorls and measures: Height 13 mm; greater diameter 19.8 mm; lesser diameter 15.3 mm. Thirteen young and/or fragmentary paratypes are also catalogued under the same number at the Academy of Natural Sciences of Philadelphia. We thus have proof that this genus has been living in the same region of southeastern Jamaica (alongside *Poteria*) at least since the Miocene era without any change in the generic shell characters.

Genus **Poteria** Gray, 1850

*Poteria* Gray, Nomen. Moll. animals and shells. . . . British Museum, part 1, Cyclophoridae, p. 11. 1850 (not *Poteria* Bartsch, 1942). Genotype: (*Turbo jamaicensis* Dillwyn) = *Poteria jamaicensis* (Dillwyn, 1823), by subsequent designation by H. B. Baker (Nautilus **35**: 15. 1922), who cited it as *Turbo jamaicensis* (Chemnitz) Wood 1828.

*Ptychocochlis* Simpson, 1895, p. 431. Genotype: (*Neocyclotus jamaicensis* Chemnitz) = *Poteria corrugatum* (Menke, 1830), by original designation.

*Bartschivindex* H. B. Baker, 1943, p. 135. Genotype: (*Cyclostoma varians* C. B. Adams) = *Poteria varians* (C. B. Adams, 1852), by original designation.

The operculum of *Poteria* has a well-developed raised calcareous lamella projecting from the external face. Usually this lamella is Γ shaped, that is, upright, then abruptly reflected peripherally to meet the succeeding turn, and completely roof over the intervening space to produce a complete external calcareous face of the operculum. In a few species known, the reflected portion of the lamella does not completely roof over the intervening space on all of the opercular turns. In these species, however, there is always one part of the operculum in which the external face is completely roofed over and continuous. The operculum of *Poteria martensi* (Kobelt) was figured by Bartsch (1942. pl. 42, figs. 8–10).

The male animal of a paratype of *Poteria simpsoni* (Bartsch) (1942, p. 95, pl. 14, figs. 16–18) is illustrated by our Fig. 2.

**Poteria clarendonensis**, n. name

The name of the species of *Poteria* described by Bartsch as *Ptychocochlis taylori* (1942, p. 89, pl. 13, figs. 31–33) is preoccupied by Bartsch's use of the name *Poteria* (*Cyclobakeria*) *welchi taylori* (1942, p. 119). The present species from upper Clarendon Parish, Jamaica, may be known as *Poteria clarendonensis*.

**Poteria Jamaicensis** (Dillwyn, 1823)

———. Lister, Historia conchyliorum: pl. 56, fig. 51. 1865; *idem*, Huddesford edition: pl. 55, fig. 51. 1770.

*Turbo jamaicensis* Dillwyn, Index to Lister (3d ed.): 9. 1823; Wood, Index Test., suppl.: pl. 6, fig. 3. 1828.

*Ptychocochlis gossei* Bartsch, U. S. Nat. Mus. Bull. 181: 85, pl. 13, figs. 34–36. 1942.

The earliest designation of the genotype of *Poteria* by H. B. Baker in 1922 was not entirely clear. The restatement by Bartsch (1942, p. 106) was more explicit, but the species name accepted by all workers as the genotype was misidentified in Bulletin 181. The earliest valid name for this species is that listed above. Fortunately the figures in Lister upon which we now know the specific name rests are even more critically correct than is the figure in Wood (1828) in depicting the usual form of this Jamaican land operculate. The species from the vicinity of Kingston called *Ptychochlis gossei* by Bartsch in 1942 is the true genotype of *Poteria*.

**Poteria daltei**, n. name

The name of the species of *Poteria* described by Bartsch as *Ptychocochlis welchi* (1942, p. 88, pl. 13, figs. 20–30) is preoccupied by the name *Poteria* (*Cyclobakeria*) *welchi* Bartsch (1942, p. 118). It may be called *Poteria daltei* to maintain a valid name in honor of its first discoverer, D'alte A. Welch.

**Poteria bowdenensis**, n. sp.

As noted above, specific names published only in connection with a "pseudogeneric term" do not have any binomial standing. The form described and figured by Bartsch (1942, p. 138, pl. 41, figs. 4–6) is hereby validly named *Poteria bowdenensis*.

The holotype, A.N.S.P. no. 82532a, was collected by Uselma C. Smith and S. L. Schermo from the Miocene fossil beds at Bowden, Jamaica. It has 3.5 whorls remaining and measures: Height 10.8 mm; greater diameter 15.7 mm; lesser diameter 12.0 mm.

Critical comparisons have shown that this fossil species is most closely related to *Poteria campeachyi* and *P. petricola*. The presence of *P. bowdenensis* in Miocene times, alongside the genus *Cyclochittya*, proves that at least two of the Recent genera of Neocyclotinae have been living on Jamaica since the Miocene, without any change in generic shell characters. How much preceding time was necessary for their development and generic differentiation is as yet completely unknown.

Genus **Plectocyclotus** Kobelt and Moellendorff, 1898

Genotype: (*Cyclostoma jamaicensis* Sowerby, 1843) = *Plectocyclotus lineatus* (Gray, 1850), by subsequent designation by Pilsbry and Brown (Proc. Acad. Nat. Sci. Philadelphia, 1910: 533).

This is the genus that was incorrectly called "*Poteria*" by Bartsch in 1942. It is separate and distinct from *Poteria* Gray, 1850, possessing a different sculpture of the shell and a different type of operculum. There is no intergradation whatsoever known between the opercular type of *Poteria* and that of *Plectocyclotus*.

**Plectocyclotus lineatus** (Gray, 1850)

See U. S. Nat. Mus. Bull. 181: 109, pl. 16, figs. 34–36; pl. 42, figs. 14, 15. 1942.

The external male anatomy (head and verge) of this species from the Mandeville region, Manchester, Jamaica, is illustrated herewith (Fig. 20).

**Plectocyclotus novussaltus** (Chitty, 1857)

See U. S. Nat. Mus. Bull. 181: 112, pl. 16, figs. 4–6. 1942.

This is the earliest available specific name for the fourth species to be called *jamaicensis*. Incorrectly identified as *jamaicensis* by Bartsch, this is neither the *jamaicensis* of Chemnitz (nonbinomial), nor of Dillwyn (1823) and Wood (1828), nor of Sowerby (1843).

**Incerticyclus**, n. gen.

Genotype: (*Neocyclotus* (*Ptychocochlis*) *bakeri* Simpson) = *Incerticyclus bakeri* (Simpson, 1895).

The "pseudogeneric term" *Incerticyclus* seems worthy of preservation for two Jamaican species possessing a shell with only an angulation at the outer edge of the umbilicus, and fine or coarse rugose shell sculpture on the later postnuclear whorls. The operculum is unknown.

The genotype, *I. bakeri*, was described and figured by Bartsch (1942, p. 137, pl. 18, figs. 1–3). The only other probable member of this genus known to me is *Incerticyclus perpallidus* (C. B. Adams, 1852) (Bartsch, 1942, p. 139, pl. 18, figs. 4–6).

Genus **Cycladamsia** Bartsch, 1942

See U. S. Nat. Mus. Bull. 181: 125. 1942.

Genotype: (*Cyclostoma seminudum* C. B. Adams) = *Cycladamsia seminudum* (C. B. Adams, 1851), by original designation.

**Cycladamsia seminudum** (C. B. Adams, 1851)

See U. S. Nat. Mus. Bull. 181: 130, pl. 18, figs. 32–34; pl. 42, figs. 4, 5. 1942.

The head and verge of male animals of this species from near Balaclava, St. Elizabeth, Jamaica, are figured herewith (Fig. 24).

Genus **Neocyclotus** Crosse and Fischer, 1872

See U. S. Nat. Mus. Bull. 181: 203. 1942. Genotype: (*Cyclostoma dysoni* Pfeiffer) = *Neocyclotus dysoni* (Pfeiffer, 1851), by subsequent designation by Pilsbry and Brown (Proc. Acad. Nat. Sci. Philadelphia, 1910: 533).

*Austrocyclotus* Bartsch, 1942, pp. 132, 195. Genotype: (*Cyclostoma straminea* Reeve) = *Neocyclotus stramineus* (Reeve) 1843, by original designation.

*Austrocyclotus* must be considered a synonym or an incompletely separated section or phase of *Neocyclotus*. The opercula and the radular formulae of the two groups are identical (3: 3: 3: 2), and the external male characters are essentially alike. The shell sculpture, which was the chief basis of distinction given by Bartsch in 1942, is not separable into two patterns. There are intergrading conditions of sculpture on the shells of some species from the South American region.

**Neocyclotus wetmorei** (Bartsch and Morrison, 1942)

See U. S. Nat. Mus. Bull. 181: 203, pl. 41, figs. 13–15. 1942.

Originally described from Tierra Nueva, Sierra Negros, at 3,700–5,000 feet elevation, this species is now also known from near a Motilon Indian village, Arioca, between 4,000 and 6,000 feet elevation, in the Sierra Perija, also in Dept. Magdalena, Colombia. Questions raised during the identification of these additional specimens of *wetmorei* led to the reexamination of the sculpture of all the species of *Neocyclotus* and of *Austrocyclotus* in the United States National Museum collections. Upon complete analysis of the shell sculpture, it became evident that the sculpture pattern is identical in the two groups. At one extreme the sculpturing is weak and partly obsolete; at the other end of the scale it is strongly marked. With such a series in front of us, including species such as *wetmorei* which possess sculpture of intermediate strength, it becomes immediately apparent that an artificial separation of two generic groups distinguished only by the relative strength of the same pattern of sculpture is biologically incorrect.

**Neocyclotus grenadensis mcsweeni** (Bartsch, 1942)

See U. S. Nat. Mus. Bull. 181: 135, pl. 17, figs. 22–24. 1942.

The head and verge of the male of this subspecies from the Lesser Antilles is illustrated

herewith (Fig. 19). This sketch should be compared with the anatomic details given by Crosse & Fischer (1890, vol. 2, pp. 150–156, pl. 43, figs. 8, 10; and pl. 47, fig. 1) of the Central American genotype *Neocyclotus dysoni* (Pfeiffer).

**Neocyclotus fuscescens** (Swainson) 1840

*Cyclotus fuscescens* Swainson, Treatise on malacology: 186. 1840.
*Poteria vincentina* Pilsbry, Proc. Acad. Nat. Sci. Philadelphia **87**: 4, pl. 1, figs. 2, 2a. 1935.
*Aperostoma* (*Austrocyclotus*) *vincentinum* Bartsch, U. S. Nat. Mus. Bull. 181: 133, pl. 17, figs. 1–3. 1942.

According to Swainson, Guilding was the first to collect this species "in the woods of St. Vincent." Critical analysis shows that this name was taxonomically validated in 1840, in connection with the generic description, and with a stated locality. As the only such species known from St. Vincent, *fuscescens* is clearly the correct specific name, almost a century ahead of *vincentina*.

Genus **Cyclohidalgoa** Bartsch, 1942

See U. S. Nat. Mus. Bull. 181: 136, 268. 1942.

Genotype: (*Cyclostoma translucidum* Sowerby) = *Cyclohidalgoa translucidum* (Sowerby, 1843), by original designation.

**Cyclohidalgoa translucidum bejumense** (H. B. Baker, 1923)

See U. S. Nat. Mus. Bull. 181: 270, pl. 30, figs. 4–6. 1942.

The male anatomy of this subspecies, mentioned in the generic description, is here figured for the first time (Fig. 23). The animals sketched were collected by H. B. Baker and lent to the United States National Museum for examination of the animal characters.

Genus **Incidostoma** Bartsch and Morrison, 1942

See U. S. Nat. Mus. Bull. 181: 187. 1942.

Genotype: *Incidostoma malleatum* Bartsch and Morrison, 1942, by original designation.

Since *Aperostoma* was restricted to or fixed upon the group of neopupine snails from Mexico by Herrmannsen's 1852 designation of the species *mexicanum* Menke 1830 as genotype, that name cannot be used for this Central and South American genus of snails. The name *Pseudaperostoma* H. B. Baker, 1943 (p. 135) published as a replacement for *Aperostoma* Bartsch, 1942 (not Troschel, 1847) has proved to be unnecessary in the light of present knowledge. Recent examination at the United States National Museum of a lot of the species *Incidostoma incomptum* (Sowerby), collected at Aguadita (Vicente de Guerrera), Colombia, and sent by Ralph W. Jackson, has proved very interesting. This one sample contains one fine large individual possessing the full siphonal notch at the posterior angle of the aperture. The remainder are smaller, either young or not completely matured shells, but are identical except for lack of this characteristic notch. Because this single characteristic of distinction between *Incidostoma* and *Pseudaperostoma* is seen as an unbroken transitional series when all known species are considered, and because members of one species (*incomptum*) are now known to exhibit the same transition, these two named groups must be considered as one, or at most artificial sections of one genus, which does not show biological separation.

**Incidostoma duffianum** (C. B. Adams, 1845)

See U. S. Nat. Mus. Bull. 181: 276. 1942.
*Aperostoma* (*Aperostoma*) *brujense* Bartsch and Morrison, U. S. Nat. Mus. Bull. 181: 241, pl. 34, figs. 13–15. 1942).

There can be no real question that this is Adams's species *duffianum*, with almost exactly the same measurements in millimeters. In fact, there is also a possibility that the named form *portobellense* Bartsch and Morrison is also a synonym of *duffianum*. There is not enough material available at present to clarify the probable sexual dimorphism of size and other characters of the shells of this group of species from the Panama region.

**Incidostoma giganteum** (Reeve, 1842)

See U. S. Nat. Mus. Bull. 181: 237, pl. 33, figs. 7–9. 1942.

The two described and figured shells, collected from the Cerro de Garagara, Panama, by Pittier, contained the animals. Of the two, one was a male. A sketch of the head and verge of this species is furnished here (Fig. 5) for comparison with the other genera of the Neocyclotinae.

Group of Incidostoma bogotense Pfeiffer

The three new species described herewith belong to the group of medium-sized to small species centering around *Incidostoma bogotense*

Pfeiffer. All were submitted to the United States National Museum for identification by Ralph W. Jackson, whom we wish to thank for this opportunity to study and describe additional new forms of tropical American operculate land snails.

**Incidostoma jacksoni**, n. sp.

Figs. 13–15

Shell medium sized, depressed helicoid, of about 4 whorls, above variable in color from fleshy buff to dark greenish horn, usually buff or pale fleshy color on the apex, shading to darker brownish (or greenish) on the body whorl. Nucleus of about 1½ whorls, smooth; postnuclear whorls finely transversely ribbed, on the body whorl with the fine ribs irregularly scalloped, producing marked malleations on the upper half of the body whorl. Last whorl little or not at all depressed at the aperture. Suture well impressed, but not deep. Periphery marked by a low revolving angularity, produced by the impressing of the whorl just above and below the narrow blackish peripheral color band. Base openly umbilicate, the inner zone lighter, the outer half darker than the upper surface; base smoother than the upper surface and a little malleated, the finer growth lines being a little irregular and not forming riblets. Umbilicus contained 3¾ times in the shell diameter. Aperture bluish white within, oblique, circular, the obtusely pointed protraction at the posterior angle feebly grooved. Peristome entire, feebly protracted below the posterior angle at the lowermost junction of parietal wall and penultimate whorl. Operculum typical for the genus, of about 10 turns.

The holotype, U.S.N.M. no. 543524, was received from Ralph W. Jackson. It comes from near Mera, Oriente Province, Ecuador, has 4.3 whorls, and measures: Height 15.4 mm; greater diameter 27.0 mm; lesser diameter 21.0 mm; aperture height 11.5 mm; aperture diameter 11.8 mm.

U.S.N.M. no. 543525 contains 14 paratypes from the original lot. Numerous paratypes comprising the remainder of this lot are in Mr. Jackson's collection. Another locality, Agoyan, Ecuador, is represented by one specimen, no. 543526, in the National Museum collection and three in the Jackson collection.

The animal of this species has not been observed. This species is closest in appearance to *Incidostoma allantayum* from Peru but is much smaller. The subcorded, dark, peripheral band seems very characteristic. *I. jacksoni* is likewise very similar to *I. diminutum* but is larger and usually more greenish in color, especially on the body whorl. It is also larger than but not so polished in appearance as *I. chocolatum*.

**Incidostoma chocolatum**, n. sp.

Figs. 10–12

Shell small, depressed helicoid, covered with a dark brown epidermis, usually dark chocolate-brown on the body whorl. The bronzy tan nucleus (eroded in the type) consists of 1½ smooth whorls. Postnuclear whorls marked by very fine growth riblets, becoming somewhat irregular due to scalloping on later whorls, producing the finely malleated or "chicken-scratched" appearance characteristic of the upper side of the body whorl. Periphery well rounded but marked by an impressed line immediately above the feeble peripheral ridge which gives the shell the appearance of having had a layer peeled off the surface above this line. Base well rounded, smoothish, less malleated than upper surface of body whorl, lightest around the umbilicus which is open, narrowly exhibiting all the whorls to the apex. Aperture bluish white, oblique, almost circular; peristome entire, a little effuse in the region of the subperipheral ridge which tends to become obsolete at the aperture. Umbilicus contained 4.1 times in the shell diameter. Operculum and animal not seen.

The holotype, U.S.N.M. no. 543527, was received from Ralph W. Jackson and collected near Papallagta, Ecuador. It has 3.8 whorls remaining and measures: Height 13.5 mm; Greater diameter 23.0 mm; lesser diameter 17.4 mm; aperture height 8.5 mm; aperture diameter 9.0 mm.

U.S.N.M. no. 543528 contains five paratypes from the same source; additional paratypes from the original lot are in the collection of Mr. Jackson. One of two other specimens seen from Napo, Ecuador, is catalogued as U.S.N.M. no. 543529. This species has also been seen from Runtan Hill, near Banos, Ecuador, in the Zetek collection (U.S.N.M. no. 618858).

With smaller size approaching *I. diminutum*, this new species has a more polished appearance, with the "scratched" type of malleations more evident at first glance than the growth riblets. This more polished appearance as well as its

usually deep chocolate brown color and proportionately larger aperture will easily distinguish it from *I. diminutum*, which is of about the same size. The color and polished appearance are much more useful in separating individuals of these two species collected together as at Papallagta and at Napo than is their absolute size. There is more than enough variation in size between the smallest individuals (believed to be males) and the largest (believed to be females) of *I. chocolatum*, to overlap the slight difference in size of these species. *I. chocolatum* is markedly smaller and more polished in appearance than is *I. jacksoni*.

**Incidostoma diminutum**, n. sp.

Figs. 7–9

Shell small, depressed helicoid, of about 4 whorls, fuscous or occasionally greenish fuscous; nucleus rufous, of 1½ smooth turns; postnuclear whorls marked by fine growth ribs, more or less irregularly scalloped above the subperipheral angulation, reduced in height over this band, and extending across the base and into the umbilicus, of undiminished strength or even a little coarser and more prominent in the umbilical area. The malleation or "scratched" sculpture is always present, but much less evident than the fine ribs. Whorls well rounded above and below, separated by a well-impressed suture throughout The body whorl exhibits a narrow, dark, subperipheral color band bordered above by a lighter band; the dark band sometimes obsolete near the aperture; the peripheral half of the base is a little darker than the umbilical area, darkened by numerous hair-line revolving bands. In addition the upper slope of the whorls usually shows more hair-line bands of the same brownish color. Aperture subcircular, a little effuse peripherally, oblique, highest at the center not the columellar margin; peristome entire, characteristically biangulatedly produced at the obtuse posterior angle. The umbilicus is contained 4½ times in the shell diameter. Operculum typically incidostomid, of about 9 turns.

Nine of the specimens received from Papallagta, Ecuador, proved to have the animals dried in the shells. Of these, the holotype, U.S.N.M. no. 543530, and four paratypes were females; the other four were males. Their measurements (in mm.) follow:

| | Number of whorls | Ht. | Greater diameter | Lesser diameter | Aperture ht. | Aperture diam. |
|---|---|---|---|---|---|---|
| Holotype female U.S.N.M. no. 543530. | 4.1 | 12.1 | 19.8 | 15.8 | 8.1 | 8.6 |
| Paratype females | 4.2 | 14.0 | 21.2 | 16.5 | 8.2 | 8.8 |
| U.S.N.M. no. | 4.1 | 12.8 | 20.8 | 16.3 | 8.2 | 8.8 |
| 543531. | 4.2 | 13.2 | 20.5 | 16.1 | 8.2 | 8.8 |
| | 3.8 | 11.5 | 18.7 | 14.6 | 7.8 | 8.0 |
| Average (females) | 4.1 | 12.7 | 20.2 | 15.9 | 8.1 | 8.6 |
| Paratype males | 3.9 | 11.9 | 19.3 | 15.1 | 7.6 | 8.5 |
| U.S.N.M. no. | 3.9 | 11.7 | 18.9 | 14.8 | 7.6 | 8.4 |
| 543532. | 3.7 | 11.2 | 18.9 | 14.9 | 7.4 | 8.2 |
| | 3.7 | 11.2 | 17.0 | 13.3 | 7.5 | 7.5 |
| Average (males) | 3.8 | 11.5 | 18.5 | 14.5 | 7.5 | 8.1 |

The verge in the male is that characteristic of the genus and of the entire subfamily Neocyclotinae, namely, a ribbonlike process on the back of the neck behind the right tentacle, traversed at least in part by only a seminal groove. In this species it has a slightly swollen base and a minute terminal appendage as is typical of the genus *Incidostoma*.

Additional paratypes from Papallagta are in the National Museum collection, U.S.N.M. no. 543533, and in the Jackson collection. One fully typical specimen has been seen in the Jackson collection from Napo, Ecuador. One lot from the Zetek collection is labeled simply Oriente Province (U.S.N.M. no. 618856); another, U.S.N.M. no. 618857, comes from Runtan Hill, near Banos, Ecuador.

With the exception of *I. inconspicuum*, this is one of the smallest of all known *Incidostoma* species. It may be readily distinguished by the finely ribbed satin finish and rufous color, and the proportionately small, orbicular aperture.

Family Amphicyclotidae

As reported earlier, this group is anatomically close to the marine gastropod family Lacunidae. The external gross anatomy of the males of the genera *Crocidopoma* (subgenus *Cyclocubana*) from Cuba (Fig. 25), *Cyclohaitia* from Hispaniola (Fig. 3), and *Amphicyclotulus* from Martinique (Fig. 6) and other West Indian islands, is now known. It should be made clear however, that male animals of all the American "mainland" species of this family are still unknown and undescribed. In the absence of such anatomical proof, other characters of the shells and opercula are accepted as indicators of their relationships as members of the family Amphicyclotidae. It is

hoped that anatomical material will become available soon, to prove what is still assumed to be true biological relationship.

This family includes some genera that possess no calcification on the operculum, some that have only the upright lamella calcified, as well as some such as *Crocidopoma* in which all but the projecting fringe of the basal chondroid plate appears to be calcified. In other words, in this complex of land operculate snails, the amount of calcification of the operculum is strictly a generic character, just as surely as is the pattern of such calcification and ornamentation.

Genus **Amphicyclotus** Crosse and Fischer, 1879

See U. S. Nat. Mus. Bull. 181: 183. 1942.

Genotype: (*Cyclophorus boucardi* (Salle Mss) Pfeiffer) = *Amphicyclotus boucardi* (Pfeiffer), by original designation.

Material sent to the United States National Museum by Miss Marie A. Bourgeois, of Mixcoac, D. F., Mexico, included a form of *Amphicyclotus* which has proved to be undescribed. This brings the number of species of the genus known, from Veracruz, Mexico, to Honduras, to five.

**Amphicyclotus megaplanus,** n. sp.

Figs. 29–31

Shell large, depressed, of about 5½ well-rounded, regularly increasing whorls, separated by a distinct suture lying in the bottom of a wide sutural depression; in life with a chestnut brown periostracum. Nuclear whorls small, well rounded (smooth in our eroded paratype). The earliest postnuclear whorls are sculptured by fine axial riblets most prominent at the suture; the riblets becoming obsolete on the upper whorl slopes exposed in the spire. The later postnuclear sculpture consisting of fine irregular axial vermiculate ribbing begins at the fourth whorl and continues undiminished to the aperture. This characteristic vermiculation tends to become more diagonal on the penultimate and body whorls. Spire very low. Periphery well rounded; base widely openly umbilicate, the umbilicus three-tenths of the shell diameter, and showing all the whorls to the apex. Aperture oblique, almost round, very slightly sinuous in plane. The posterior angle is produced slightly on the parietal wall, and is slightly grooved. The last quarter of the body whorl descends markedly to the oblique aperture.

The holotype, U.S.N.M. no. 618777, is a weathered shell, collected by a peoń who sold firewood at Ocozocoantla, Chiapas, Mexico, from the forests of El Ocote, at an elevation between 600 and 1,000 meters. It is a shell of about 5½ whorls (4 remaining after loss of the apex), and measures: Height 22.5 mm; greater diameter 42.0 mm; lesser diameter 32.5 mm; aperture height 20.0 mm; aperture diameter 18.0 mm. These measurements of the aperture were made on the plane of the aperture. The apparent aperture height in a straight aperture view of the shell is 16.0 mm.

An immature paratype from the same source, U.S.N.M. no. 618778, has 5 whorls and measures: Height 18.0 mm; greater diameter 32.5 mm; lesser diameter 27.0 mm; aperture height 15.3 mm (apparent 14.0 mm.); aperture diameter 14.0 mm.

This new species is of the same size and very close in most characters to *A. texturatus* known from the region southeastward along the Chiapas-Guatemala boundary, but is easily distinguished by the much more depressed spire and the wide sutural depression above. The well rounded body whorl of *megaplanus* slopes downward considerably to the wide "valley" depression around the suture.

Genus **Calaperostoma** Pilsbry, 1935

See U. S. Nat. Mus. Bull. 181: 159. 1942. Genotype: (*Cyclostoma cumingii* Sowerby) = *Calaperostoma cumingi* (Sowerby) 1832, by original designation.

*Aperostomops* Pilsbry, Proc. Acad. Nat. Sci. Philadelphia 87: 4. 1935. Genotype: (*Cyclostoma purum* Forbes) = *Aperostomops purum* (Forbes) 1850, by original designation.

*Aperostomops* should be included in the synonymy of the genus *Calaperostoma* Pilsbry, published on the same page in 1935. The two genotypes, *cumingi* and *purum*, are so close to each other that the zoological synonymy can hardly be questioned. Although not traceable in any way in Bulletin 181, the use of *Calaperostoma* on p. 159 of that bulletin actually constituted a selection from two names of equal (identical) publication date. In case such undeclared selection be considered insufficient, the selection and use of *Calaperostoma* in Bulletin 181 is hereby declared a deliberate action.

Genus **Amphicyclotulus** Kobelt, 1912

See U. S. Nat. Mus. Bull. 181: 54. 1952.

Genotype: (*Cyclostoma rufescens* Sowerby) = *Amphicyclotulus rufescens* (Sowerby), 1843, by subsequent designation by Bartsch (1942, p. 54).

As reported on p. 54 of Bulletin 181, this genus was proved to belong to the Amphicyclotidae by examination of the animals of the species *rufescens* from Martinique, and of *mineri* from Dominica.

**Amphicyclotulus rufescens** (Sowerby), 1843

*Cyclostoma rufescens* Sowerby, Thes. Conch. **1**: 94, pl. 24, figs. 36, 37. 1843.
*Cyclostoma rufescens* Sowerby, Proc. Zool. Soc. **11**: 60. 1843.
*Cyclophorus acutiliratus* Drouet, Ess. moll. terr. et fluv. de la Guyane française: 89, pl. 3, figs. 42–44. 1859.
*Amphicyclotulus rufescens* Bartsch, U. S. Nat. Mus. Bull. 181: 56, pl. 10, figs. 4, 5. 1942.
*Amphicyclotulus acutiliratus* Bartsch, U.S.N.M. Bull. 181: 56, pl. 10, figs. 1–3. 1942.

The external anatomy of the male animal is sketched in Fig. 6. The sculpture of the shell of this species is highly variable in its strength. The form named *rufescens* by Sowerby is the extremely highly sculptured variation at the end of the series, with the spiral ridges crenulated or scalloped. The medium-sculptured part of the series, minus the scalloping of the ribs, received the name *acutiliratus*.

Genus **Cyclohaitia** Bartsch, 1942

See U. S. Nat. Mus. Bull. 181: 52. 1942.

Genotype: *Cyclohaitia haitia* Bartsch, 1942, by original designation.

**Cyclohaitia haitia** Bartsch, 1942

See U. S. Nat. Mus. Bull. 181: 53, pl. 10, figs. 12–14. 1942.

The male anatomy of this species from southern Haiti is illustrated here in our Fig. 3.

Genus **Crocidopoma** Shuttleworth, 1857

See U. S. Nat. Mus. Bull. 181: 39, 62. 1942.

Genotype: (*Cyclostoma* (*Cyclotus*) *floccosum* Shuttleworth 1857 = *Cyclostoma orbellum* Lamarck) = *Crocidopoma orbellum* (Lamarck) 1822, by subsequent designation by Crosse (Journ. Conchyl. **39**: 160. 1891).

The male anatomy of this genus was reported in 1942 as resembling that of *Amphicyclotulus*. Even though its operculum is mostly calcified, *Crocidopoma* is here allocated to its proper place in the Amphicyclotidae on the basis of anatomy.

The only character now separating *Crocidopoma*, s.s., from the subgenus *Cyclocubana*, is the suture sharply accentuated by the extreme prominence of the single largest spiral keel next to the suture. The opercular character, a difference in the length of the chondroid fimbriations, is hardly of generic value. At present such differences are known to be a matter of abrasion rather than of differential development.

**Crocidopoma orbellum** (Lamarck, 1822)

*Cyclostoma orbella* Lamarck, Anim. sans Vert. **6**(2): 148. 1822.
*Cyclostoma distinctum* Sowerby, Thes. Conch. **1**: 106: 24, fig. 38. 1843.
*Cyclostoma* (*Cyclotus*) *floccosum* Shuttleworth, Journ. Conchyl. **5**: 268, 272. 1857.
*Cyclostoma vortex* Weinland, Mal. Blatt. **9**: 90. 1862.
*Crocidopoma vortex* Bartsch, U. S. Nat. Mus. Bull. 181: 63, pl. 11, figs. 13–15. 1942.
*Crocidopoma floccosum* Bartsch, U. S. Nat. Mus. Bull. 181: 64, pl. 12, fig. 16. 1942.
*Incerticyclus distinctus* Bartsch and Morrison, U. S. Nat. Mus. Bull. 181: 275, pl. 39, fig. 11. 1942.

The synonymy of the genotype species is now known to include the names *distinctum* Sowerby, *floccosum* Shuttleworth, and *vortex* Weinland. The variability of the species, and the lack of an adequate number of specimens in the hands of the early writers, both contributed to the confusion surrounding the correct name for this species. Dr. Forcart of the Geneva Museum has recently furnished us with photographs of the type specimens of *orbellum* and of *floccosum*, proving their specific identity.

**Crocidopoma lamarcki** (Petit, 1850)

*Cyclostoma lamarcki* Petit, Journ. Conchyl. **1**: 48. 1850.
*Crocidopoma casuelense* Crosse, Journ. Conchyl. **39**: 160. 1891.
*Crocidopoma casuelense* Bartsch, U. S. Nat. Mus. Bull. 181: 65, pl. 41, figs. 7–9. 1942.

Petit was first to recognize the fact that a second distinct species of the group was figured and incorrectly identified as *orbellum*, and named it as above. Unfortunately, very few molluscan authors, even those interested in the group, have read Petit's remarks, and name for this common low-spired species, since they were printed a century ago.

Subgenus **Cyclocubana** Bartsch, 1942

See U. S. Nat. Mus. Bull. 181: 39. 1942.

Genotype: (*Cyclotus perdistinctus* Gundlach) =

*Crocidopoma* (*Cyclocubana*) *peridistinctum* (Gundlach, 1858), by original designation.

Male animals of *Cyclocubana* have become available for study in the past couple of years. Their examination has confirmed the biological position of this subgenus of *Crocidopoma* in the Amphicyclotidae, and cleared up the last question of the zoogeographic picture of this family in the West Indies.

**Crocidopoma (Cyclocubana) perdistinctum** Gundlach, 1858

See U. S. Nat. Mus. Bull. 181: 39, pl. 8, figs. 10–15. 1942.

Included in the collection of the late Dr. Charles Ramsden, of Santiago de Cuba, recently donated (in part) to the United States National Museum, were four lots of this species. One of these consisted of a number of specimens collected at San Andres, near Reuter, Oriente Province, Cuba, by Dr. Ramsden. Six of these contained the animals dried in place in the shells. These specimens were boiled in water to soften them for extraction from the shells, and for examination. Of these six, three were males and three were females, indicating the essentially equal ratio of sexes in the population.

The male animal of *perdistinctum* Gundlach is illustrated by Fig. 25. These males are typically amphicyclotid; that is the verge is located on the back of the neck behind the tentacles. It is traversed by a closed tube (the vas deferens) throughout, and has a long slender terminal filament almost equal in length to the stouter basal portion of the verge. In fact, there is no measurable difference (other than size) apparent between the verges of the generic groups *Cycloblandia*, *Amphicyclotulus*, *Cyclohaitia*, *Crocidopoma*, and *Cyclocubana*, that represent the family Amphicyclotidae in the West Indian region.

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# WASHINGTON SCIENTIFIC NEWS

## DISCOVERY AND ENCOURAGEMENT OF SCIENCE TALENT

Michael Faraday is a prime example of the discovery of science talent. The son of a blacksmith and a humble bookbinder's apprentice, Faraday was started on his brilliant and versatile scientific career when a kindly customer at his shop, a Mr. Dance, took him to hear four lectures by Sir Humphry Davy, a great scientist of the early 1800's. Faraday made careful notes of the lectures which he sent to Davy on the urging of Mr. Dance. Davy's response was immediate, kind, and favorable, with the result that Faraday was hired as his laboratory assistant. In the course